Water Babies

Standards

Science (1999) - Grade 2

Goal 1

The learner will build an understanding of plant and animal life cycles.

Objective 1-3

Analyze the life cycle of animals

- Being born.
- Developing into an adult.
- Reproducing.
- Eventually dying.

Objective 1-4

Compare and contrast life cycles of different animals.

NATIONAL STANDARDS:

List of Benchmarks for Science (4th Ed.)

Standard 4. Understands the principles of heredity and related concepts

Level I (Grades K-2)

1. Knows that plants and animals closely resemble their parents
2. Knows that differences exist among individuals of the same kind of plant or animal

Vocabulary

egg

larvae

migrate

sound

Objectives

- To be able to list at least five animals that spend their young lives in the sound.
- To be able to describe how young animals differ from adults.
- To be able to use critical thinking skills to match the larval stage with the correct adult species.
- To be able to observe similarities and differences between different animal larval and adult stages.

Materials

- cardboard squares (such as 5x7 index cards)
- set of animal baby cards
- yarn

- *If access to Internet,* use Estuary Live website, with Estuarine Plant and Animal Factsheets (also will be available to print out)

Procedure

- Read introduction and discuss the process of animals changing from larval stages to adults. If you have access to the Internet you may want to show examples of these changes, best if they were not one of the species in this activity or use the Estuary Live video.
- Cut the adult and baby animal cards apart and place each picture on large 5"x7" index cards.
- Connect the matching baby and adult cards with two pieces of yarn.
- Hang the set of cards on students with the baby facing the front and the adult on the back.
- Instruct each student to look at their baby and try to imagine the identity of their animal. (without looking at the card on their back)
- Have students walk around the room asking other students to look at the drawing of the adult animal on their back. They can ask the other student five yes or no questions about the characteristics of their animal. They should ask up to five other students to look at the drawings of the adult and give answers to the questions.

  Only five questions can be asked of any one student.
  For example: a student has a seastar on their back, She asks….

  1. Is it large? (no)
  2. Does it have fur? (no)
  3. Is it slimy? (no)
  4. Does it have two eyes? (no)
  5. Do you eat it? (no)

  A new student is asked:
  1. Can you find these on the beach? (yes)
  2. Is it a shell? (no)
  3. Is it gold colored? (yes)
  4. Is it a seastar? (yes)

- If students begin to get frustrated because they are unable to figure out their animal, give then small hints. Point out that the babies are very tiny and the adults may be larger. Ask them to observe the basic structure of the baby and guess what that may turn into as an adult. The drawings are not drawn to scale.

Introduction

At least 90% of all seafood species spend at least part of their lives in the safety of the sound or estuary. Many species of fish and crabs migrate into the sound to lay their eggs. The young animals find abundant food and shelter in the brackish marshes along the sound. Some animals go out to the open ocean and release their eggs. The young float in the ocean and grow and eventually will return to the shallow waters of the sound. The future of the seafood industry and these animals are dependent upon the existence of healthy, unpolluted sounds.

Discussion Questions

1. Which baby looked the most like the adult?

2. Which baby looked the least like the adult?

3. Why do some animals lay so many eggs (thousands or millions)?

4. How would pollution affect a baby fish?

Extensions

1. If possible purchase a baby fish from an aquarium shop or raise them in your classroom. Point out how tiny and vulnerable the young fish is to be eaten by other fish.

2. If possible purchase some brine shrimp eggs (sea monkeys) and allow the students to observe their development from eggs to adults.

3. Discuss how adult animals protect their young. Include concepts such as territoriality, camouflage, and distracting behaviors such as the attacks of mockingbirds.

Additional Resources

- ***Use the Estuary Plant and Animal Fact sheets*** (these are available on the Internet at http://www.estuarylive.org or http://www.estuary.gov) to supplement the information regarding the animals listed in this activity. These Fact sheets include some of the major animal species that occur along the North Carolina coast.
- ***Use the EstuaryLive streaming video*** (this is available on the Internet at http://www.estuarylive.org) to enhance the discussion of the animals observed.
    - If you participate during the live broadcast during the National Estuaries Day in the fall or use the archived footage on the above webpage, students will be able to see many of the communities, plants and animals studied during this lesson.

History of EstuaryLive (from http://www.estuaries.gov/welcome.html)

- EstuaryLive, an interactive field trip through our nation's estuaries over the Internet, was the featured event for National Estuaries Day 2002.
- On October 3 and 4, 2002, teachers and students of all ages toured 13 estuaries, learning about these dynamic coastal ecosystems, the different types of estuaries that can be found along the coasts, the plants and animals that call these habitats home, and about the commercial and recreational importance of estuaries. Approximately one million viewers watched EstuaryLive on October 3 and 4.
- During the program, naturalists from NOAA's National Estuarine Research Reserves and U.S. EPA's National Estuary Program led live tours through seven estuaries, including Pamilco Sound, in North Carolina; South Slough, in Oregon; Salish Sea, in Washington; North Inlet, in South Carolina; Charlotte Harbor, in Florida; Great Bay, in New Jersey; and Jug Bay in Maryland. Elmer's Island in Louisiana was scheduled to air live on October 3, but was cancelled because of Hurricane Lili.

Assessment

- Give the students a photograph or drawing of another animal larvae and have them draw what they think they would look like as an adult. You can also do this the reverse way and give them a picture of an adult and have them predict what the larvae would look like.

This activity is from the North Carolina National Estuarine Research Reserve publication Project Estuary, It is revised in August 2003, by NC National Estuarine Research Reserve and the Albemarle-Pamlico National Estuary Program for use with EstuaryLive, live interactive Internet programs about North Carolinas estuaries.

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